

has had personal experience, whilst the full amount of the evils is, we are convinced, hardly suspected or understood, though so far important, if only as a matter of national concern, as to be worthy of attentive examination, even by the government of the country.—The existence of the art and science of architecture is, in brief, the consequence of two of the natural wants, that of providing a habitation, and of delighting the eye by the presence of beautiful forms; and he, the architect, who has made subjects connected therewith his entire study, is the fitting and proper guardian of the interests of those who have not, and the desirable medium between the person having the want, and the individual who supplies it, just as the physician is interposed between the patient and the druggist, who compounds the means of remedy. And to discriminate between the profession of architecture and the trade of building, we conceive to be alike important to the interests of both, though not usually so considered as regards the latter. The builder may otherwise, so readily lie under an accusation of having magnified the amount, or, to increase his profit, of having executed his work in an inferior manner, that it cannot but be his interest to relieve himself from such imputations. The vulgar notion, that perishable work is "good for trade," cannot be too soon exploded as fallacious,—whilst it leads to great dishonesty.—The anxiety of the architect to have work well executed, is the very reason, why he is seldom consulted. A speculative builder will always be found to do the work at any price, that may happen to be in hand; and the rashness or inability to estimate, shown in the lists of tenders, which we constantly publish, is the best argument in favour of a change, that we could give. But the existence of an architect to these men is fatal. They can no longer make their usual profit, and after defrauding their fellow tradesmen in competitions, and their employers in the work, they generally succeed in defrauding themselves. We have no implicit faith in "proverbs;" but that honesty is the best policy, and that penny wisdom is pounds-folly, we take to be, at least, capable of testimony from builders and householders. The general world, however, will not attend to these points, and draw conclusions from them, as we must; they will continue to send for builders, when they should apply to architects; bad construction will exist in architecture; self-delusion, chicanery, and loss in trade, and large annual expense to every body, until an effort is successfully made, to define the limits of the profession of architecture and the trade of building. What is for the benefit of the one, is certainly for the advantage of the other. The present practices are injurious to those who least deserve to suffer; namely, the builders who are proud of turning out good work, and it is for the interest of this class that an architect should be constantly engaged, and we submit, that the questionable interest of any who deal with less integrity, has no claim to consideration.

But the interest of the public is, indeed, the main argument for a more frequent appeal to the services of architects, and it is our object to urge architects to diffuse extensively the knowledge of the full scope of architecture, and its mode of operation, to make it a matter of popular knowledge, as it is of popular importance and economy. Why an architect should not be consulted in many other matters than those for which he is at present applied to, we are unable to say; for example, in taking a new house, how often might the advice of a competent person prevent the most serious injury to the health of a family, and great expense to the tenant. In nearly all the cases, to which it is now the practice for a householder to send for a builder, we submit that a direct saving of expense would generally follow the employment of an architect. Neither will architecture be valuable as a profession, nor will the profession act as it ought, and might do, for the benefit of the art, until all subjects which really are departments of the profession, are referred to the architect, just as now, in the case of each, the services of the medical man and the lawyer are enlisted.

But the more we examine into the causes of general evils, the more we find they become classed under a few heads. Want of information in the public; indifference of architects to the extension of such information, are in one way or other, the causes of every thing, to

which we shall have to allude. The iniquitous management in competitions, and its evil results, is but one department of the general loss to the public, through its ignorance of the merits of architecture, though it is one which is so often presented in striking instances, that it cannot remain, as in the case of other matters, unheeded, and had not the general question of fairness in competitions, merged into discussion about the propriety or otherwise, of a few details,—whilst the great grievance remains, and no system could possibly be chosen, worse than the present, which is in fact, none—architects would ere this, have stood in a more favourable position, than that disclosed in a late number. We should regret the rejection of our own views by those who may find it difficult to agree at once with a few details; the great causes of the present unsatisfactory position of the art and the profession, are, as we have said, ignorance in the public, and indifference or want of unanimity in the profession, and no exertions should be diverted from these ends; the general question is too urgent to lose any single effort.

The full definition of the profession and art of architecture, is, we think, worthy of being attentively considered, and pointed out. The science, and much of the art, is becoming enveloped in what the world calls "engineering," and the architect is seldom applied to in any thing which is supposed to require scientific construction. They must be up and stirring: During their long sleep, a new class has entered upon the practice of architecture; men not claiming to possess any knowledge of art, who were at one time makers of machinery, and are now called by a new name "civil engineers," have stepped in for half their work, because they entered into the spirit of the time, and sought to qualify themselves,—because they met, and discussed, and published, and did real benefit to the world, whilst architects did not whisper the word "architecture," and forgot that bridge-building, excavating, embanking, and tunnelling were most important ends of their existence as a profession, and, though the architecture of Vitruvius, including all these, lay open before them, on the table.—We shall have to consider the important particular of education, since that may no doubt be one great cause of the present state, and it may be said, that it is to defects of early professional education or experience, that we owe many of our difficulties, and we may inquire into the propriety of making such an imputation. We do, however, say now, that the deficiencies of architects partly arise out of the want of a full conviction on their parts, of the extensive range of architecture, which would be found to include all that now passes under the name "engineering," and almost every thing that requires the arrangement of materials, and design in form. We long ago urged that, in not seeking the improvement of design in furniture and interior decoration, the architect neglected a most important department of his pursuit, and we have omitted no opportunity of enforcing similar views, though really, they form a very small part of what we contemplate under the general head of "architecture." The education and profession of architects is limited to only a few departments of architecture, but were both conducted on sound principles, there is no reason why they should not be made to conduce to the successful exercise of every branch. No good result will follow from an attempt to limit the requirements, necessary for the professional practice. The powers of the human mind are bounded only by the object, and the task, not by inability of comprehension. The study is one of unlimited extent, the profession of very wide range; no course has ever yet been indicated for the first, no good system inculcated in the other: as a profession, architecture has to attain a higher rank, and an increased sphere of benefit. Both require the devotion of the utmost ability, for which the rewards are more mental than pecuniary.

THE SERPENTINE IN HYDE PARK.—"A Subscriber" wishes us to call the attention of the Chief Commissioner of Woods and Forests to the numerous holes which have been formed in the bottom of the Serpentine river, by removing the gravel at various times, and are extremely dangerous to bathers. If these were filled up so as to obtain a uniform depth of water, many accidents would be prevented,

THE BOND QUESTION.

IRON & WOOD.

THE letter of Dr. Bromet (p. 84, ante) having directed attention to an evil to be apprehended from the expansion and contraction of hoop-iron bond,—or, at least, from the disparity in these respects between it and the masonry or brickwork in which it is inclosed, and that gentleman having a doubt as to thick walls affording to the iron protection against the temperature without, the following memorandum will perhaps be deemed relevant to the point at issue, although not hoop-iron, but a bond of a stronger description, is referred to:—

"The consideration of the linear expansion of iron ties is one of great practical interest, seeing the dangerous influence which that property may exercise under particular circumstances; though, fortunately, its amount is not such as to be at all perilous in ordinary cases. The expansion upon the length of malleable iron by 180° increase of temperature is—

According to Smeaton	1.794th
" Haasler	1.798th
" Faraday	1.812th
" Lavoisier and Laplace ..	1.819th
" Dulong and Petit	1.846th
" Borda	1.865th

The trifling difference here exhibited may be attributed to difference in the density of the material; and if we take the datum afforded by Smeaton's experiments, namely, the greatest, we find that with this increment of heat the gain in length is 1 inch in 66 feet.

During the erection of Girard College, Philadelphia, a few years ago, the architect, Thomas U. Walter, in order to settle some conjectures concerning certain iron bands employed for resisting the lateral pressure of a series of arches, as regarded the effect of their expansion and contraction, instituted experiments as follows:—At a season when the temperature was at 82° of Fahrenheit, a self-registering minimum thermometer was placed on one of the bands, situated in the middle of a wall 5 feet 5 inches thick (which was exposed to the full power of the sun in summer, but was sheltered by a temporary roof in winter); and the opening which had been left for that purpose was then built up. Ten months after, when the temperature was also 82°, the wall being re-opened, the thermometer was found to have descended to 42° during the intermediate winter—the extreme cold of which had been 3° below Zero. Again, during the same winter, but at a time when the temperature was at 24°, a self-registering maximum thermometer was placed on the band in the same wall, on the same level with the other thermometer, but about 60 feet distant from it, and the wall built up compactly, as in the other case: eleven months after, the temperature being also at 24°, the walling was removed, and the thermometer found to have ascended to 61° during the intermediate summer, the extreme heat of which was 94°. Thus it was found that, while the difference between the winter and summer temperatures was so much as 97°, that in the middle of the wall was but 19°, which, according to the datum afforded by Smeaton, gives a linear expansion of 1.7526th, amounting to 1-12th of an inch in 54 feet, the length of the iron bands referred to, and from which has to be deducted the amount of dilatation in the other materials in contact with them."

P.S.—By the way, I do not remember to have seen any reference made to the effect which may be expected to be produced by the action of the solar rays on Mr. Stephenson's great tubular bridge. I am not aware of its proposed geographical bearings; but it appears that 90° difference in temperature would produce about 1 foot of difference in length, and which would be bad enough supposing it alike on both sides, but worse if chiefly on one. Some telescopic arrangement over the central pier, I should imagine, would provide for such an exigency. JAMES WYLLSON.

DON'T FEAR A WARM BATH.—An impression being prevalent that the warm bath makes those who use it liable to take cold, the committee for promoting the establishment of baths and wash-houses have published a certificate to the contrary, signed by 144 eminent physicians and surgeons.